CITY OF GLENDALE, CALIFORNIA
Management Services Department
INTERNAL AUDIT

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November 7, 2013

REPORT #: 2014-07

Steve Zurn, Director
Public Works Department

Dear Steve,

Enclosed is the final audit report for the Fuel Dispensing Audit. Internal Audit would like to thank you and your staff for the support and assistance provided to us during the audit.

Should you have any questions, please feel free to contact Eileen Donahue or myself.

Thank you,

Michele Flynn,
City Auditor

Enclosure

cc:  Yasmin Beers, Assistant City Manager
     Dave Cole, Mechanical Maintenance Administrator
     Robert Elliot, Director of Finance
     April Fitzpatrick, Deputy Director of Public Works
     Scott Ochoa, City Manager
     Karl Vogeley, Fleet Manager
     City Council
     Audit Committee

WE RECYCLE

# Fuel Dispensing Audit

# November 7, 2013

## Background

In accordance with Internal Audit's fiscal year 2013-14 annual work plan, Internal Audit completed an audit on the City's Fuel Dispensing operations.

The city maintains 16 fuel dispensing sites managed by Fleet Services within the Public Works Department. Each fuel site supplies one or more fuel types: premium, unleaded or diesel.

The fuel records indicate that over 536,000 gallons of fuel were dispensed from city fuel tanks during FY 2013 at a cost of nearly $1.9 million.  The table below shows the fuel type and quantity dispensed by site location in FY 13.

| Fuel Site Location | Fuel Type | Quantity (in gallons) |
|---|---|---|
| Glendale Water & Power | Unleaded | 71,100 |
| | Diesel | 13,100 |
| Public Works | Unleaded | 91,400 |
| | Diesel | 36,600 |
| Civic Center | Premium | 6,200 |
| | Unleaded | 26,100 |
| Integrated waste | Diesel | 45,400 |
| Brand Park | Unleaded | 6,700 |
| | Diesel | 800 |
| Verdugo Park | Unleaded | 4,900 |
| | Diesel | 1,000 |
| Police Station | Unleaded | 167,200 |
| Fire Stations –combined | Unleaded | 9,100 |
| | Diesel | 56,400 |

Fuel deliveries occur at each fuel dispensing location as

procured from a vendor through an undistributed purchase order.

An OPW automated fuel management system put in place by Fleet Services in 2006 provides for an automated fuel control and tank gauging process that works in connection with a Petro Vend fuel control system and Phoenix Premier software. Benefits of the system include, real-time reporting of fuel inventories, driver and vehicle accountability of fuel usage, data capture, and sensor tank monitoring.

Any city employee set up with a driver record in the system may receive fuel at a city fuel site for city-owned vehicles or equipment by use of a valid vehicle chip key. This dual system of control increases accountability and allows for improved tracking of fuel events. Additional controls exist to limit and restrict fuel usage based on boundaries programmed in the system by vehicle record for such factors as maximum quantity, daily/monthly allocation, mileage reasonability, and fuel type.

Normally, at the fuel island terminal an employee will enter their authorized driver record number which corresponds to their City employee ID# along with the chip key assigned to the vehicle. The terminal will prompt the user for the vehicle odometer entry.  Next, the system authenticates the user's data, fuel type and activates the pump, if specific criteria are met. For example, the difference in mileage since the last fueling must be within the range defined by the mileage reasonability code.

Driver, vehicle, and transaction data from the fueling events are stored and imported to the fuel management system which can be viewed on-line or accessed through the system reporting module by site, driver, vehicle, master, etc.

*November 7, 2013*                                                                      1

Two limitations recognized include: (1) an individual may use another employee's authorized driver record to gain access to a fuel terminal, and (2) there is no systematic method to ensure the chip key used is actually assigned to the vehicle or equipment being fueled.

Additionally, the system allows for the dispensing of fuel through a master fuel chip key. Generally, these master keys are assigned to trusted individuals at each garage location and are not vehicle specific. Currently, there are 23 valid master fuel keys in the system. In most cases, the use of the master key is limited to situations where the standard vehicle fuel chip key is not functioning or misplaced. If a master key is used, the manual input of vehicle number and the odometer reading is necessary for capturing the fuel details.

## Objective, Scope and Methodology

The objectives of this audit were to determine whether internal controls for fueling processes at City fuel sites are adequate to ensure that fuel usage is appropriately authorized, limited to valid purposes, and monitored to detect variances. The scope of this audit focused on controls for dispensing fuel at City managed fuel locations. The period covered fuel activities between January 1, 2013 through August 2, 2013 where 24,944 fuel transactions occurred and 317,264 gallons of fuel were dispensed.

In order to accomplish the audit objectives Internal Audit performed the following:
- Conducted a site visit to multiple fueling facilities throughout the City.
- Identified and tested controls over fueling privileges by analyzing card records.
- Reviewed detailed fuel data by site, driver and vehicle then selected events to evaluate usage.

It was noted that underground storage tanks (UST) are used to provide fuel at most City locations. The City is required to perform regular inspections on the tanks and follow state and federal regulations. Testing of UST compliance requirements was not included in the scope of this audit.

## Summary of Results

Overall, we found that a fuel system has been installed that provides some controls over fuel access at the City fuel sites. Yet, as a result of audit procedures performed nine improvement opportunities were identified related to creating policies and procedures, monitoring fuel transactions, system changes, fuel terminal processes, vehicle record review, fuel receipt and invoice processes, driver record guidelines, limits on master fuel key usage, and expected system controls. These nine improvement areas require attention by management.

The Observations, Risk, Recommendations, and Management Responses are summarized on the following pages.

| Item | Observation/Risk | Recommendation | Management Response |
|---|---|---|---|
| 1. | Uniform policies and procedures do not exist for the City's fuel program. Employees with system responsibilities do not have established procedures to follow.<br><br>Additionally, from interviews we learned that some employees assuming fuel system responsibilities from others were not provided enough training to have a complete understanding of all aspects of the full system capabilities.<br><br>Further, there are no consistent written guidelines on fuel dispensing procedures.<br><br>* * *<br><br>Lack of documented policies and procedures and limited training increases the risk of inconsistent performance of job duties, impedes successful transition of staff, and contributes to a decreased level of service. | It is recommended that documented policies and procedures be established for maintaining the fuel system database and monitoring the fuel dispensing tanks. These policies and procedures could be utilized to provide training to individuals working with the fuel system.<br><br>The comprehensive fuel program policy and procedures could address multiple activities including but not limited to:<br> - conditions for setting up new records.<br> - employee training.<br> - operational use of vehicle fuel chip keys.<br> - termination of system card records and vehicle chip keys.<br> - fuel purchase, delivery, receipt and invoice review.<br><br>Also, general guidelines can be developed for employees dispensing fuel. | Fleet management agrees with the recommendation. The anticipated completion date is May 31, 2014. |

| Item | Observation/Risk | Recommendation | Management Response |
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| 2. | Regular monitoring is not occurring to identify fuel misuse or unusual events. Reports to investigate unusual transactions are only produced as questionable events arise.<br><br>Although a reporting mechanism exists there are some limitations in that data must be reviewed manually and creation of ad hoc exception reports for specifically defined events is not available.<br><br>Further, the miles per gallon calculation is not generated in the fuel system reports even though this would increase the capability to visually spot check the reasonableness of a fuel event compared to other transactions for the vehicle.<br>* * *<br>Irregular or unusual events may occur and not be detected timely to make corrective action due to the lack of tracking and monitoring of fuel usage. | It is recommended that management evaluate the reports available in the system to identify those most useful for monitoring fuel transactions for unusual events and implement a regular monitoring process that focuses on the events that indicate a risk of misuse.<br><br>Additionally, this process to review reports on fuel usage could be implemented in cooperation with supervisors of other departments that utilize vehicle fuel resources to ensure the City resources are being used as intended. | Fleet management agrees with the recommendation. The anticipated completion date is May 31, 2014. |

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| 3. | Based on discussions regarding the system used for fueling operations and detailed testwork performed, we noted the following:<br><br>- The Phoenix Premier fuel system software installed has not been updated with new releases. The software in place is version: 2.0, however, version: 3.1 is available as a free download from the vendor's website.<br><br>- Fleet employees with the fuel system software installed on their computers have full system access. The system does not provide a function to limit user access privileges.<br><br>- Employees with system access have the capabilities to add, change, and delete data. There is no audit trail on the transactions processed by user to monitor activities.<br><br>- System default passwords have not been changed by the users.<br><br>- Some employees are not fully knowledgeable on the system processing functions and the database relationships. In one | It is recommended that Fleet management consider the following:<br><br>- Updating the system software to the most current version available after confirming with staff from Information Services Department and the vendor providing software maintenance that the update will provide for an enhancement and will not impact the integrity of the system data.<br><br>- Change system default passwords if it is determined that system security will increase and a risk is avoided.<br><br>- Determine if additional controls can be developed such as monitoring to offset the risks present due to the full access capabilities for system users and lack of audit trail of user transactions.<br><br>- Evaluate if a new fuel system can be purchased that provides added controls and increased features where the benefits gained outweigh the cost and risk exposures of the current system. | Fleet management concurred with much of the recommendation and provided the following response:<br><br>- the software has been updated by the system vendor at all locations.<br><br>- it was identified that only 6 employees have password access and there are 3 steps to enter the system. Changing to multiple individual passwords will add complexity to the process and it does not appear that this is a risk point for theft or fraud. However, changing the default passwords will be considered further.<br><br>- additional controls will be investigated to determine the feasibility and cost associated with them.<br><br>The anticipated completion date is May 31, 2014. |

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|  | instance, an employee responsible for record updates at a fuel location was not aware that the system database was not updating for changes due to computer reconfigurations after an individual retired from City service.<br><br>* * *<br><br>There is a potential that the system is exposed to risks and vulnerabilities when system updates are not completed, users access is not limited and default passwords are not changed. Plus with no audit trail, there is no direct method to determine if transactions are inadvertently or deliberately modified or deleted. |  |  |
| 4. | Based on inquiries performed while viewing the fuel site locations the following was noted:<br><br>- No specific criteria defines situations for placing fuel terminals in bypass mode and occurrences are not adequately documented. Fuel terminals can be placed in bypass mode by removing the locked panel and moving a switch. This eliminates input controls at the pump and allows fuel to be dispensed without a recording of the transaction. Based | It is recommended that fleet management consider the following:<br><br>- Situations where bypass mode is necessary be minimized and activity logging be used to provide a control for ensuring that all fuel dispensed can be attributed to a City business need and for authorized purposes. The need for the bypass configuration can be documented and approved. | Fleet management agrees with the recommendation associated with fuel terminals in bypass mode and will investigate compensating controls for non-secure sites. Management noted that it is likely not practical to document lock out situations due to the number of times this occurs. However, a trial period of one-month will be performed to evaluate further.<br><br>The anticipated completion date is May 31, 2014. |

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|  | on discussions pumps are only placed in bypass mode under very rare circumstances.<br><br>- The cause that creates a "lock out" situation at a fuel pump is not investigated or documented. The systematic controls will put the fuel pump in lock out status if certain incorrect entries are made at the fuel terminal. When these situations occur, an employee responsible for fuel management must reset the fuel pump. No supplementary log is maintained to document the circumstances of the lock out event.<br><br>- A few fuel terminals at dispensing locations are not secured behind locking fences.<br><div align="center">* * *</div><br>Bypass transactions are not documented systematically which creates an opportunity for an unauthorized fuel transaction to occur that is not traceable. Lock out situations may be occurring due to inappropriate activities which are not detected. Fuel is more likely to be misused if the site location is not secure. | - Lock out situations be documented and circumstances of lock out be reviewed to identify trends or areas of weakness that could be improved.<br><br>- Implement compensating controls for the fuel sites not secured by a locking fence such as increased monitoring or added surveillance cameras. |  |

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| 5. | Discussions and testwork performed in relation to the system controls for the vehicle chip key and the vehicle card record identified the following: | It is recommended that fleet management perform a complete review of all valid vehicle records in the system to eliminate duplicate vehicle entries, invalidate the records for vehicles no longer in service, and set a practice to limit one vehicle chip key per vehicle. | Fleet management agrees with the recommendation. |
| | - Some vehicles have multiple fuel chip keys with the same number coding which can not be separately identifiable in the system. | | Management noted that non vehicle fuel keys are identified as such. The keys are either under the control of the respective fleet shop or retained by the users.  A low fuel capacity will be set for the non vehicle keys to limit the potential loss per fuel pump activation.  The fuel use for non vehicle fuel keys will be shared with the using departments on a regular basis to determine if the fuel pumped is consistent with the equipment use. Vehicle fuel capacity must be set at or slightly above true tank capacity; otherwise, the system will throw an error code and not capture the fuel use.  As part of the policy revision a policy will be devised to require each vehicle to fuel daily and/or maintain at least ½ full tank |
| | - Vehicle chip keys designated for fueling tools are also fueling vehicles without recording the indentifying vehicle data. | Additionally it is recommended that for each instance that the vehicle record is not assigned to an actual vehicle the purpose be documented and additional controls put in place to provide for increased restrictions on fueling activities and regular monitoring of the fueling events to confirm appropriateness. Finally, the vehicle quantity code in the system can be placed at or lower than the actual fuel capacity of the vehicle. | |
| | - At least 30 vehicle records in the system have generic non-vehicle descriptions and less restrictive system controls that also do not record identifying vehicle data. | | |
| | - Quantity codes assigned to control the number of gallons per each fueling by vehicle are often greater than the actual fuel capacity of the vehicle. | | |
| | -  There were 19 instances where two valid vehicle records existed for one vehicle. | | The anticipated completion date is May 31, 2014. |
| | -  Several valid vehicle records are for vehicles no longer in service. | | |

* * *

Less accountability and controls over

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| | fuel usage by vehicle which contributes to inaccurate vehicle records, that impacts the vehicle preventive maintenance program. | | |
| 6. | It was noted through inquiry with staff and by reviewing fuel invoices that some controls are in place for fuel purchases, yet a few weak areas were noted as follows:<br><br>- The process for acceptance of a fuel delivery from the fuel vendor and the documentation maintained for invoice review is not consistent for each fuel site location.<br><br>- The concept of segregation of duties is not always considered for those performing the functions of ordering fuel, verifying delivery from the vendor, reviewing the appropriateness of the invoice and in some instances, invoice payment approval.<br><br>- No reconciliation is performed on a periodic basis between the quantity of fuel added to the tank, to the quantity of fuel used, to the quantity invoiced.<br><br>- Fuel pumps are not calibrated regularly. | It is recommended that additional controls be added to the fuel receipt and invoice process including a process to reconcile fuel used to fuel quantities purchased and received. Further, some examples of controls to add may include requiring the printing of the inventory report at the fuel terminal before and after fuel is dropped in the tank and attaching the printed data to the bill of lading for review and verification of delivered quantities in comparison to the fuel invoice.<br><br>Plus identifying areas where duties can be segregated by function such as ordering, receiving, and approving fuel activities. As well, ordering fuel at quantities preferable with the fuel purchase order to obtain the best price and reviewing invoiced items for vendor compliance. Finally, the pumps could be recalibrated on a periodic basis to ensure reliability of measured data. | Fleet management agrees with much of the recommendation, however, the segregating of duties for certain fuel activities are not practical due to the small number of employees available for these tasks. Fuel is ordered to keep individual fuel sites at optimal levels in the event of a prolonged emergency.<br><br>The anticipated completion date is May 31, 2014. |

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|  | - There is a potential for fuel to be ordered at quantities that do not obtain the best price per the contract. | | |
|  | \* \* \* | | |
|  | Less controls and limited segregation of duties increase the risk that losses may occur and go undetected. | | |
| 7. | Discussions and testwork performed in relation to the system controls for the driver record identified the following: | It is recommended that standard guidelines be established for driver records; including centralizing the process to deactivate records based on information provided by the Human Resources Department. Further active records could be reviewed periodically with input from supervisors to identify those no longer needed.   To enforce accountability a standard form could be implemented requiring employees to sign an acknowledgment that they understand the responsibilities of being a fuel user. | Fleet management agrees with the recommendation. Human Resources Department is now providing Fleet Services with the list of inactive employees on a regular basis to purge system records. Contact with departments will be made to consider the question of requiring employees to sign an acknowledgement form as recommended. |
|  | - Multiple individuals with access to the Phoenix software can add, change, and delete a driver record. | | |
|  | - The set up of a driver record is not consistent and there are no standards on the entries for the fields of the driver profile. | | The anticipated completion date is May 31, 2014. |
|  | - Procedures to deactivate a driver record are not all encompassing and timely. Thus, 21 driver records with a valid status were identified and found associated with employees that had left City service. Plus, six driver record numbers were used to obtain fuel after the employee left City service. | | |

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| | - Some non-employee driver records exist that are generic and assigned to a department.<br><br>-  Many driver records are not used regularly. There were 161 instances where the driver record number was not used in calendar year 2013.<br><br>- There are some instances where of the driver name and number detail is mis-matched in comparison to the City employee record.<br><br>* * *<br><br>Accountability of transactions are weakened when driver records are not updated regularly and associated with an individual. Further, lack of standards increase the risk that records are set with privileges greater than necessary. | | |
| 8. | From inquiry and review of fueling events by master fuel chip key holders, the following was noted:<br><br>- There are no standards on the set up or use of a master fuel key.<br><br>- External logs to capture the use of a master key including the reason for the transaction are not maintained. | It is recommended that the use of master fuel chip keys be limited to only those situations necessary with the number of assigned master keys decreased to only a few. Further, each use of a master key can be tracked through a log and monitored for appropriateness. | Fleet management agrees with the recommendation. The anticipated completion date is May 31, 2014. |

| Item | Observation/Risk | Recommendation | Management Response |
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|  | - There are instances where the master key is used for standard fueling of vehicles rather than the vehicle chip key.<br><br>-  Assignment of multiple master keys at two of the garage locations may be more than necessary.<br><br>- Employees with full access to the fuel system are also assigned a master key.<br><br>- There are four valid master keys with no activity in the last 5 years.<br><br>* * *<br><br>Allowing for fuel access with limited controls increases the opportunity for misuse. |  |  |
| 9. | Testwork performed to verify that system controls were working as intended found the following:<br><br>- Reasonability code descriptions include zero which means no change is required in the mileage entry between refueling. As a result, for one vehicle the same mileage entry was entered 11 times and fueling was not denied.<br><br>- Entry of no data in the odometer | It is recommended that the vehicle records be reviewed to identify why expected restrictions did not occur and make adjustments to the vehicle record as appropriate; for example, ensuring the starting odometer entry is proper as recorded for all vehicles in order for the reasonability code to result in a fuel restriction. As well, monitoring fuel activity can be implemented to identify irregular mileage entries. | Fleet management agrees with the recommendation and will review the balance of the fleet to insure that proper restrictions are in place and functioning as intended. Management noted that Public Safety vehicles are not restricted for the fuel system.<br><br>The anticipated completion date is May 31, 2014.<br>. |

| Item | Observation/Risk | Recommendation | Management Response |
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| | field did not restrict fuel access for some vehicles with set reasonability codes.<br><br>- Several non-Fire/Police vehicle records were set with a non-restrictive reasonability code which allows fuel to be dispensed even though the odometer entry may not be reasonable compared to the previous mileage entry.<br><br>- A few vehicles with a set reasonability code were not denied fuel access when the odometer entry was beyond the range limit.<br><br>* * *<br><br>Reliance on system controls not accurately set decreases the integrity of the fuel system and allows for the potential of misuse. | | |